

Quality Control Procedure for Salinity Protocol

Lab Guide

Task

Check the accuracy of your hydrometer.

What You Need

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| <input type="checkbox"/> <i>Water Temperature Field Guide</i> | <input type="checkbox"/> <i>Hydrology Investigation Quality Control Procedure Data Sheet</i> |
| <input type="checkbox"/> Hydrometer | <input type="checkbox"/> Distilled water |
| <input type="checkbox"/> Salinity Conversion table in <i>Teacher's Guide</i> | <input type="checkbox"/> Salt (NaCl) |
| <input type="checkbox"/> 500-mL clear graduated cylinder | <input type="checkbox"/> Balance |
| <input type="checkbox"/> Alcohol-filled thermometer (calibrated) | |

In the Lab

Make the 35 ppt Standard

1. Measure 17.5 g of table salt (NaCl) with the balance.
2. Pour the salt into the 500-mL cylinder.
3. Fill the cylinder to the 500-mL line with distilled water.
4. Gently mix the salt and water until all of the salt is dissolved. This is your 35-ppt standard.

Check your Hydrometer Using Distilled Water

1. Pour 500 mL of distilled water into the 500-mL cylinder.
2. Put the thermometer in the distilled water. Use the *Water Temperature Field Guide* to measure the water temperature. Record on the *Hydrology Investigation Quality Control Procedure Data Sheet*.
3. Place the hydrometer gently into the water. After it stops bobbing, read the specific gravity at the bottom of the meniscus. It should not touch the sides of the cylinder. Read to three places and record on the *Hydrology Investigation Quality Control Procedure Data Sheet*.
4. Look up the specific gravity and temperature on the conversion table. The salinity should be between 0.0 and 1.0 ppt.
5. If the salinity is not between 0.0 and 1.0 ppt, recheck your measurements. If the salinity is still not between 0.0 and 1.0 ppt, your hydrometer is not reading correctly.

Check your Hydrometer Using the Standard

1. Put the standard in a 500-mL cylinder.
2. Put the thermometer in the distilled water. Use the *Water Temperature Field Guide* to measure the water temperature. Record on the *Hydrology Investigation Quality Control Procedure data Sheet*.
3. Gently place the hydrometer into the cylinder. When it stops bobbing, read the specific gravity at the bottom of the meniscus. It should not touch the sides of the cylinder. Read to three places and record on the *Hydrology Investigation Quality Control Procedure Data Sheet*.
4. Look up the specific gravity and water temperature on the conversion table to find the salinity of the water. Record the salinity on the *Hydrology Investigation Quality Control Procedure Data Sheet*.
5. If the salinity standard is off by more than 1 ppt, mix a new standard and repeat the procedure. If it is still off by more than 1 ppt, talk to your teacher about possible problems.
6. Discard the 35-ppt standard or pour it into a clean and dry 1-L bottle, cap, and label. Rinse equipment with distilled water, dry, and store.